Dell™ PowerConnect™ 32*xx*, 33*xx*, and 52*xx* Switches

System Information Guide

Notes, Notices, and Cautions

NOTE: A NOTE indicates important information that helps you make better use of your system.

NOTICE: A NOTICE indicates either potential damage to hardware or loss of data and tells you how to avoid the problem.

CAUTION: A CAUTION indicates a potential for property damage, personal injury, or death.

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Models PowerConnect 3248, PowerConnect 3324, PowerConnect 3348, PowerConnect 5212, PowerConnect 5224

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⚠ Caution: Safety Instructions

Use the following safety guidelines to ensure your own personal safety and to help protect your system from potential damage.

General

- Observe and follow service markings. Do not service any product except as explained in your system documentation. Opening or removing covers that are marked with the triangular symbol with a lightning bolt may expose you to electrical shock. Components inside these compartments should be serviced only by a trained service technician.
- If any of the following conditions occur, unplug the product from the electrical outlet and replace the part or contact your trained service provider:
  - The power cable, extension cable, or plug is damaged.
  - An object has fallen into the product.
  - The product has been exposed to water.
  - The product has been dropped or damaged.
  - The product does not operate correctly when you follow the operating instructions.
- Keep your system away from radiators and heat sources. Also, do not block cooling vents.
- Do not spill food or liquids on your system components, and never operate the product in a wet environment. If the system gets wet, see the appropriate section in your troubleshooting guide or contact your trained service provider.
- Do not push any objects into the openings of your system. Doing so can cause fire or electric shock by shorting out interior components.
- Use the product only with approved equipment.
- Allow the product to cool before removing covers or touching internal components.
- Operate the product only from the type of external power source indicated on the electrical ratings label. If you are not sure of the type of power source required, consult your service provider or local power company.

⚠ Caution: Safety Instructions *(continued)*

- Use only approved power cable(s). If you have not been provided with a power cable for your system or for any AC-powered option intended for your system, purchase a power cable that is approved for use in your country. The power cable must be rated for the product and for the voltage and current marked on the product's electrical ratings label. The voltage and current rating of the cable should be greater than the ratings marked on the product.
- To help prevent electric shock, plug the system and peripheral power cables into properly grounded electrical outlets. These cables are equipped with three-prong plugs to help ensure proper grounding. Do not use adapter plugs or remove the grounding prong from a cable. If you must use an extension cable, use a 3-wire cable with properly grounded plugs.
- Observe extension cable and power strip ratings. Make sure that the total ampere rating of all products plugged into the extension cable or power strip does not exceed 80 percent of the ampere ratings limit for the extension cable or power strip.
- To help protect your system from sudden, transient increases and decreases in electrical power, use a surge suppressor, line conditioner, or uninterruptible power supply (UPS).
- Position system cables and power cables carefully; route cables so that they cannot be stepped on or tripped over. Be sure that nothing rests on any cables.
- Do not modify power cables or plugs. Consult a licensed electrician or your power company for site modifications. Always follow your local/national wiring rules.
- When connecting or disconnecting power to hot-pluggable power supplies, if offered with your system, observe the following guidelines:
  - Install the power supply before connecting the power cable to the power supply.
  - Unplug the power cable before removing the power supply.
  - If the system has multiple sources of power, disconnect power from the system by unplugging *all* power cables from the power supplies.
- Move products with care; ensure that all casters and/or stabilizers are firmly connected to the system. Avoid sudden stops and uneven surfaces.

⚠ Caution: Safety Instructions *(continued)*

Rack Mounting of Systems

Observe the following precautions for rack stability and safety. Also refer to the rack installation documentation accompanying the system and the rack for specific caution statements and procedures.

Systems are considered to be components in a rack. Thus, "component" refers to any system as well as to various peripherals or supporting hardware.

⚠ **CAUTION: Installing systems in a rack without the front and side stabilizers installed could cause the rack to tip over, potentially resulting in bodily injury under certain circumstances. Therefore, always install the stabilizers before installing components in the rack.**

After installing system/components in a rack, never pull more than one component out of the rack on its slide assemblies at one time. The weight of more than one extended component could cause the rack to tip over and may result in serious injury.

NOTE: Your system is safety-certified as a free-standing unit and as a component for use in a Dell rack cabinet using the customer rack kit. The installation of your system and rack kit in any other rack cabinet has not been approved by any safety agencies. It is your responsibility to have the final combination of system and rack kit in a rack cabinet evaluated for suitability by a certified safety agency. Dell disclaims all liability and warranties in connection with such combinations.

- System rack kits are intended to be installed in a rack by trained service technicians. If you install the kit in any other rack, be sure that the rack meets the specifications of a Dell rack.

⚠ **CAUTION: Do not move racks by yourself. Due to the height and weight of the rack, a minimum of two people should accomplish this task.**

- Before working on the rack, make sure that the stabilizers are secured to the rack, extended to the floor, and that the full weight of the rack rests on the floor. Install front and side stabilizers on a single rack or front stabilizers for joined multiple racks before working on the rack.
- Always load the rack from the bottom up, and load the heaviest item in the rack first.
- Make sure that the rack is level and stable before extending a component from the rack.
- Use caution when pressing the component rail release latches and sliding a component into or out of a rack; the slide rails can pinch your fingers.

⚠ Caution: Safety Instructions *(continued)*

- After a component is inserted into the rack, carefully extend the rail into a locking position, and then slide the component into the rack.
- Do not overload the AC supply branch circuit that provides power to the rack. The total rack load should not exceed 80 percent of the branch circuit rating.
- Ensure that proper airflow is provided to components in the rack.
- Do not step on or stand on any component when servicing other components in a rack.

⚠ **CAUTION: A qualified electrician must perform all connections to DC power and to safety grounds. All electrical wiring must comply with applicable local or national codes and practices.**

⚠ **CAUTION: Never defeat the ground conductor or operate the equipment in the absence of a suitably installed ground conductor. Contact the appropriate electrical inspection authority or an electrician if you are uncertain that suitable grounding is available.**

⚠ **CAUTION: The system chassis must be positively grounded to the rack cabinet frame. Do not attempt to connect power to the system until grounding cables are connected. Completed power and safety ground wiring must be inspected by a qualified electrical inspector. An energy hazard will exist if the safety ground cable is omitted or disconnected.**

Modems, Telecommunications, or Local Area Network Options

- Do not connect or use a modem during a lightning storm. There may be a risk of electrical shock from lightning.
- Never connect or use a modem in a wet environment.
- Do not plug a modem or telephone cable into the network interface controller (NIC) receptacle.
- Disconnect the modem cable before opening a product enclosure, touching or installing internal components, or touching an uninsulated modem cable or jack.

⚠ Caution: Safety Instructions *(continued)*

When Working Inside Your System

Protecting Against Electrostatic Discharge

NOTICE: Only a certified service technician should perform repairs on your system. Damage due to servicing that is not authorized by Dell is not covered by your warranty.

Static electricity can harm delicate components inside your system. To prevent static damage, discharge static electricity from your body before you touch any of the electronic components, such as the microprocessor. You can do so by periodically touching an unpainted metal surface on the chassis.

You can also take the following steps to prevent damage from electrostatic discharge (ESD):

- When unpacking a static-sensitive component from its shipping carton, do not remove the component from the antistatic packing material until you are ready to install the component in your system. Just before unwrapping the antistatic packaging, be sure to discharge static electricity from your body.
- When transporting a sensitive component, first place it in an antistatic container or packaging.
- Handle all sensitive components in a static-safe area. If possible, use antistatic floor pads and workbench pads and an antistatic grounding strap.

NOTE: Your system may also include circuit cards or other components that contain batteries. These batteries must also be disposed of in a battery deposit site. For information about such batteries, refer to the documentation for the specific card or component.

About This Guide

This document contains getting started/setup, safety, regulatory, and warranty information about your Dell™ PowerConnect™ network switch.

To obtain the latest versions of the documents on your hard drive, go to the Dell Support website at **support.dell.com**.

Finding Information and Assistance

Resource	Contents	Using the Resource
support.dell.com	Dell Support website • Technical support and information • Downloads for your system • Order or delivery status • Hints and tips, technology papers, service information	Go to **support.dell.com** and complete the one-time registration. • Get help with general usage, installation, and troubleshooting questions. • Obtain answers to technical service and support questions. • Get the latest versions of the drivers for your system. • Access documentation about your system and devices. • Join online discussions with other Dell customers and Dell technical professionals. • Explore a list of online links to Dell's primary vendors.
Premier Support.Dell.com	Dell Premier Support website • Service call status • Top technical issues by product • Frequently asked questions by product number • Customized service tags • System configuration detail	Go to **premiersupport.dell.com**: The Dell Premier Support website is customized for corporate, government, and education customers. This site may not be available in all regions.

Getting Started/Setup

Package Contents

Before you begin installing the switch, confirm that your package contains the following items:

- Switch
- AC power cable
- Null modem cable
- Self-adhesive rubber pads for desktop installation

- Rackmount kit for rack installation
- Dell PowerConnect CD

Before You Connect to the Network: Mounting Kit Instructions

NOTE: To stack PowerConnect 3324 and 3348 switches, see "Stacking 3324 and 3348 Switches" on page 12.

NOTICE: Do not connect the switch to the network until you have established the correct Internet Protocol (IP) settings.

Before you connect to the network, you must install the switch on a flat surface or in a rack, set up a terminal emulation program, and plug in the power cable. Then you will set up a password and IP address.

The switch is supplied with rubber feet for stationing it on a flat surface and mounting brackets and screws for mounting it in a rack.

CAUTION: Disconnect all cables from the unit before mounting the PowerConnect device in a rack or cabinet.

Installing on a Flat Surface

The switch can be installed on any appropriate level surface that can safely support the weight of the hubs and their attached cables. There must be adequate space around the switch for ventilation and access to cable connectors.

To install the switch on a flat surface:

1. Set the switch on the flat surface and check for proper ventilation.

   Allow at least 5.1 cm (2 inches) on each side for proper ventilation and 12.7 cm (5 inches) at the back for power cable clearance.

2. Attach rubber feet on each marked location on the bottom of the chassis.

   The rubber feet are optional but recommended to keep the unit from slipping.

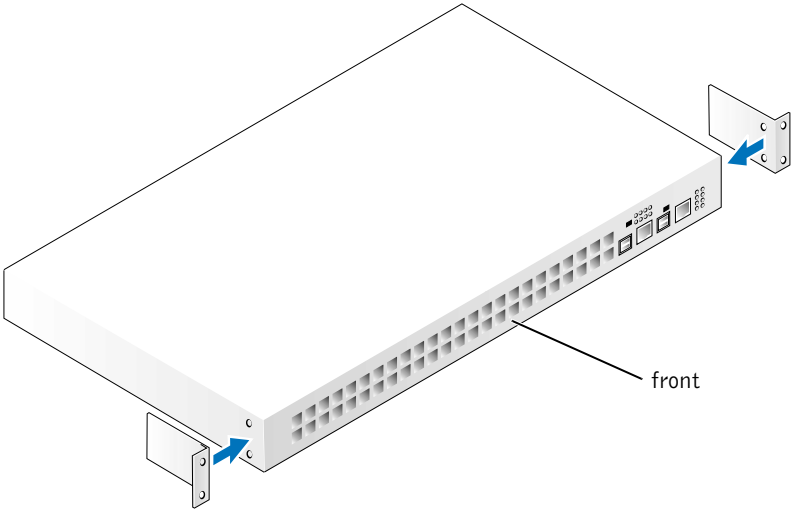
Installing in a Rack

The switch can be installed in most standard 48.3-cm (19-inch) racks.

NOTE: For racks that are not prethreaded, cage nuts are provided.

To install the switch in a rack:

1. Use the supplied screws to attach a mounting bracket to each side of the switch.
2. Position the switch in the rack and align the holes in the mounting bracket with the holes in the rack.
3. Insert and tighten two screws appropriate for your rack through each of the mounting brackets.

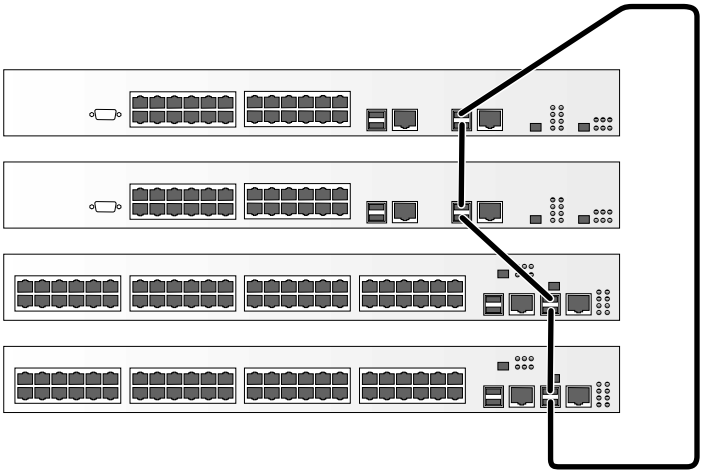


Stacking 3324 and 3348 Switches

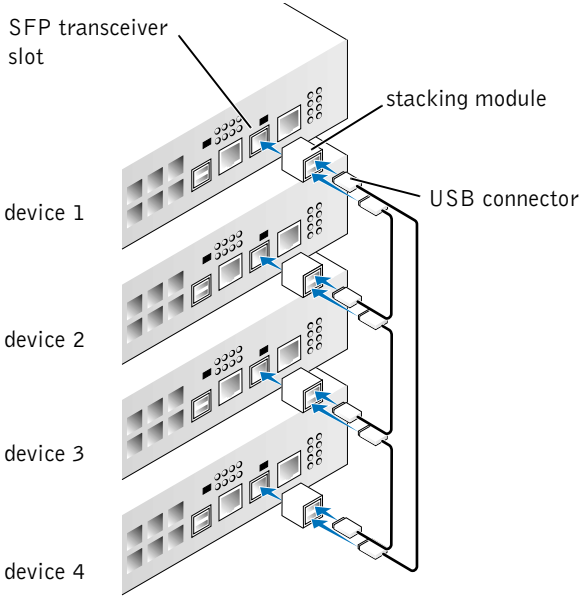
PowerConnect 3324/3348 supports stacking up to six PowerConnect 3324/3348 devices. Each PowerConnect 3324/3348 stack contains a single *Master* unit, while the remaining units are considered stacking *Members*. All management is done through the Master unit. Both 24-port and 48-port devices can be included in the stack.

To enable stacking, units must be stacked with an optional stacking module connected to port G2, which is a small form factor pluggable (SFP) transceiver slot. The stacking module should be inserted before any of the systems in the stack are booted.

NOTE: Insert the stacking module into the SFP transceiver slot, not the RJ-45 connector.



Connect the stacking cables from the lower USB connector slot (in the stacking module) in an upper unit to the upper USB connector slot (in the stacking module) in a lower unit.



Set the Master unit to Unit ID 1 during the boot process by toggling the Unit ID selector button. The stack Member units should also be assigned a unique Unit ID between 2 and 6 during the boot process. Setting the unique IDs establishes a stack of switches that you can manage through the Master unit.

Connecting the Console Port

The switch provides an RS-232 serial port that enables a connection to a desktop system or terminal for monitoring and configuring the switch. This port is a male DB-9 connector, implemented as a data terminal equipment (DTE) connection.

To use the console port, you need the following equipment:

- A terminal or TTY-compatible terminal, or a desktop or portable system with a serial port and the capability to emulate a terminal
- A null modem or crossover RS-232 cable with a female DB-9 connector for the console port on the switch

To connect a terminal to the console port:

1. Connect the female connector of the RS-232 cable directly to the console port on the switch, and tighten the captive retaining screws.
2. Connect the other end of the cable to a terminal or the serial connector of a desktop system running terminal emulation software.

   Ensure that the terminal emulation software is set as follows:

   a. Select the appropriate serial port (serial port 1 or serial port 2).

   b. Set the data rate for your switch type.

      Select 115200 baud for 33*xx* switches, or select 9600 baud for all other switches.

   c. Set the data format to 8 data bits, 1 stop bit, and no parity.

   d. Set flow control to *none*.

   e. Under **Properties**, select **VT100 for Emulation** mode.

   f. Select **Terminal keys** for **Function, Arrow, and Ctrl keys**. Ensure that the setting is for **Terminal keys** (*not* **Windows keys**).

NOTICE: When using HyperTerminal with Microsoft® Windows® 2000, ensure that you have Windows 2000 Service Pack 2 or later installed. With Windows 2000 Service Pack 2, the arrow keys function properly in HyperTerminal's VT100 emulation. Go to **www.microsoft.com** for information on Windows 2000 service packs.

3 Once you have set up the terminal correctly, plug the power cable into the power receptacle on the back of the switch.

The boot sequence appears in the terminal.

Password Protection — PowerConnect 32*xx* and 52*xx* Switches

To proceed through the command language interface (CLI) initial login screen, you must enter a password. If you have not logged into the CLI program, the default user names are *admin* and *guest*, and the corresponding passwords are *admin* and *guest*. If you log in as *guest*, you have access to the Normal Exec level. If you log in as *admin*, you have access to the Privileged Exec level.

After your initial login, define new passwords for both default user names to prevent unauthorized access to the switch, and record the passwords for future reference.

1 At the CLI login prompt, enter `admin` as the user name and password for the Privileged Exec level, and then press <Enter>.

2 Type `configure` and press <Enter>.

NOTE: Passwords are case sensitive.

3 To set the Normal Exec level password, type `username guest password 0 password`, where *`password`* is your new password (up to eight characters), and then press <Enter>.

4 To set the Privileged Exec level password, type `username admin password 0 password`, where *`password`* is your new password (up to eight characters), and then press <Enter>.

5 To save your configuration changes, type `copy running-config startup-config` and press <Enter>.

NOTICE: CLI configuration commands only modify the running configuration file and are not saved when you restart the switch. To save all your configuration changes in nonvolatile storage, use the **copy** command to copy the running configuration file to the startup configuration.

Password Protection — PowerConnect 33*xx* Switches

Password Protection and Password Recovery

This section describes password definition and the password recovery method.

Defining Passwords and User Privilege Levels Using the CLI

1. Enter the CLI context.
2. Type `enable password level <level> <password>`

   Where *level* is a number from 1 through 15, with 1 the lowest level and 15 the highest level. Level 15 specifies the Privileged EXEC mode, which is the default level.

   Where *password* is the password for the specified level. Enter a password from 1 to 32 alphanumeric characters. After you enter it, the password is encrypted for security.

   For more information about this command; the various levels; and the Privileged EXEC Mode, the Global Configuration Mode, and the Interface Configuration Mode, see the *Dell PowerConnect Switch CLI Guide* and the *Dell PowerConnect 3324/3348 User's Guide*.
3. Type `exit`.

   The CLI context is exited.

Recovering Passwords

The password recovery method is invoked from the **Startup** menu.

1. Boot or reboot the device, and press <Enter> within 2 seconds.

   The **Startup** menu displays:

   ```
   Startup menu
   [1] Download sw
   [2] Erase from flash
   [3] Erase Flash
   [4] NVRAM Erase
   [5] Password Recovery Procedure
   ```
2. Type 5 and press <Enter>.

   The access method is reset.

NOTE: To ensure device integrity, redefine the Console Access Method passwords.

For more information about configuring user passwords, see the *CLI User Guide* or the applicable *PowerConnect Switch User's Guide*.

SNMP Settings

Simple Network Management Protocol (SNMP) provides a method for managing network devices. Devices supporting SNMP run local software (agent).

The SNMP agent maintains a list of variables, which are used to manage the device. The variables are defined in the Management Information Base (MIB). The MIB presents the variables controlled by the agent. The SNMP agent defines the MIB specification format, as well as the format used to access the information over the network.

Access rights to the SNMP agent are controlled by access strings. To communicate with the device, the Embedded Web Server submits a valid community string for authentication.

The default community strings for the switch are:

- Public — Allows authorized management stations to retrieve MIB objects
- Private — Allows authorized management stations to retrieve and modify MIB objects

If you do not intend to utilize SNMP, delete both of the default community strings. SNMP management access to the switch is disabled if no community strings exist.

To delete the strings:

1. For 33*xx* switches, type `enable`.

   The prompt displays as #.

2. If you are not already in the Privileged Exec level global configuration mode, type `configure` and press <Enter>.
3. To delete the **private** community string, type `no snmp-server community private` and press <Enter>.
4. To delete the **public** community string, type `no snmp-server community public` and press <Enter>.
5. For 33*xx* switches, type `exit` to exit the configuration context.
6. To save your configuration changes, type `copy running-config startup-config` and press <Enter>.

If you do intend to utilize SNMP, change the default community strings to prevent unauthorized access to the switch.

To change the strings:

1. For 33*xx* switches, type `enable`.

   The prompt displays as #.

2. If you are not already in the Privileged Exec level global configuration mode, type `configure` and press <Enter>.

3. To delete the existing **private** community string, type `no snmp-server community private` and press <Enter>.

4. Type `snmp-server community` *`string`* `rw`, where *`string`* is your new community string (case sensitive) for read-write access, and then press <Enter>.

5. To delete the existing **public** community string, type `no snmp-server community public` and press <Enter>

6. Type `snmp-server community` *`string`* `ro`, where *`string`* is your new community string (case sensitive) for read-only access, and then press <Enter>.

7. To save your configuration changes, type `copy running-config startup-config` and press <Enter>.

Assigning IP Addresses — PowerConnect 32*xx* and 52*xx* Switches

You must assign an IP address to the switch to gain management access over the network. You may also need to a establish a default gateway between the switch and management stations that exist on another network segment. You can statically configure a specific IP address or direct the switch to obtain an address from a Boot Protocol (BOOTP) or Dynamic Host Configuration Protocol (DHCP) server when the switch is powered on. Valid IP addresses consist of four decimal numbers, 0 to 255, separated by periods. The CLI program does not accept addresses in any other format.

NOTICE: By default, the IP address is assigned to VLAN 1 through DHCP.

If you select the **bootp** or **dhcp** option, IP is enabled but does not function until a BOOTP or DHCP reply has been received. Requests are broadcast periodically by the switch in an effort to learn its IP address. (BOOTP and DHCP values can include the IP address, default gateway, and subnet mask).

To display assigned IP settings using the CLI:

1. From the Privileged Exec or Normal Exec level mode, type `show ip interface` and press <Enter>.

   The assigned IP address and subnet mask displays.

2 From the Privileged Exec mode, type `show ip redirects` to display the assigned gateway IP address, and then press <Enter>.

The following example displays IP settings assigned by **bootp** or **dhcp** using the CLI.

```
Console#show ip interface
 IP address and netmask: 10.1.0.1 255.255.252.0 on VLAN 1,
 and address mode: User specified.
Console# show ip redirects
ip default gateway 10.1.0.254
Console#
```

Before you can assign a static IP address to the switch, you must obtain the following information from your network administrator:

- IP address for the switch
- Default gateway for the network
- Network mask for the network

To assign a static IP address to the switch:

1 From the Privileged Exec level global configuration mode prompt, type `interface vlan 1` to access the interface-configuration mode, and then press <Enter>.

2 Type `ip address` *`ip-address netmask`*, where *`ip-address`* is the switch IP address and *`netmask`* is the network mask for the network.

3 Type `exit` to return to the global configuration mode prompt and press <Enter>.

4 To set the IP address of the default gateway for the network to which the switch belongs, type `ip default-gateway` *`gateway`*, where *`gateway`* is the IP address of the default gateway, and then press <Enter>.

5 To save your configuration changes, type `copy running-config startup-config` and press <Enter>.

NOTICE: Only one VLAN can be assigned an IP address. If you assign an address to any other VLAN, the new address overrides the original IP address.

The following example shows how to set a static IP address using the CLI.

```
Console(config)# interface vlan 1
Console(config-if)# ip address 192.168.1.5 255.255.255.0
Console(config-if)# exit
Console(config)# ip default-gateway 192.168.1.254
Console(config)#
```

Assigning IP Addresses — PowerConnect 33*xx* Switches

IP addresses must be assigned to a port or VLAN to gain management access over the network. IP address are:

- Statically configured
- Dynamically configured through a BOOTP or DHCP server

Valid IP addresses consist of four decimal numbers, 0 to 255, separated by periods. Anything outside this format is not accepted by the CLI program.

NOTICE: By default, the IP address is assigned to VLAN 1 through DHCP.

If the **bootp** or **dhcp** options are selected, the IP is enabled but does not function until a BOOTP or DHCP reply has been received. Requests are broadcast periodically by the PowerConnect device in an effort to learn its IP address. (BOOTP and DHCP values can include the IP address, default gateway, and subnet mask).

To display assigned IP settings using the CLI:

1. Switch the device on.

   The prompt is displayed as `console>`. This is privilege level 1.

2. Type `enable` and press <Enter>.

   A password prompt may be displayed.

NOTE: A password may not be defined for the Console Access context. For more information about defining passwords, see *"Password Protection and Password Recovery" on page 15*.

3. Type `configure` and press <Enter>.

   The prompt is displayed as `console(config)#`.

4 Type `interface vlan 1` and press <Enter>.

The prompt is displayed as `console(config-if)#`.

5 Enter the command `ip address 131.108.1.27 255.255.255.0` and press <Enter>.

The IP address is configured.

NOTE: The IP address in step 5 is an example only.

The CLI commands for configuring an IP address are:

```
console>enable
Enter Password: ******
console#config
console(config)# interface vlan 1
console(config-if)# ip address 131.108.1.27 255.255.255.0
```

Before assigning a static IP address to the PowerConnect device, obtain the following information from the network administrator:

- IP address for the PowerConnect device
- Default gateway for the network
- Network mask for the network

NOTICE: Only one VLAN can be assigned an IP address. If you assign an address to any other VLAN, the new address overrides the original IP address.

For information about configuring DHCP and BootP, see the *CLI User Guide* or the applicable *PowerConnect Switch User's Guide*.

Connecting Devices to the Switch

After you assign IP addresses to the switch, you can connect devices to the RJ-45 connectors on the switch.

NOTICE: If autonegotiation is disabled for an RJ-45 port, the auto-MDI/MDI-X pin signal configuration is also disabled.

To connect a device to an SFP transceiver port:

1 Use your cabling requirements to select an appropriate SFP transceiver type.

2 Insert the SFP transceiver (sold separately) into the SFP transceiver slot.

3 Use the appropriate network cabling to connect a device to the connectors on the SFP transceiver.

NOTICE: When the SFP transceiver acquires a link, the associated integrated 10/100/1000BASE-T port is disabled.

Regulatory Information

Electromagnetic Interference (EMI) is any signal or emission, radiated in free space or conducted along power or signal leads, that endangers the functioning of a radio navigation or other safety service or seriously degrades, obstructs, or repeatedly interrupts a licensed radio communications service. Radio communications services include but are not limited to AM/FM commercial broadcast, television, cellular services, radar, air-traffic control, pager, and Personal Communication Services (PCS). These licensed services, along with unintentional radiators such as digital devices, including computer systems, contribute to the electromagnetic environment.

Electromagnetic Compatibility (EMC) is the ability of items of electronic equipment to function properly together in the electronic environment. While this computer system has been designed and determined to be compliant with regulatory agency limits for EMI, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference with radio communications services, which can be determined by turning the equipment off and on, you are encouraged to try to correct the interference by one or more of the following measures:

- Reorient the receiving antenna.
- Relocate the computer with respect to the receiver.
- Move the computer away from the receiver.
- Plug the computer into a different outlet so that the computer and the receiver are on different branch circuits.

If necessary, consult a Dell Technical Support representative or an experienced radio/television technician for additional suggestions.

Dell computer systems are designed, tested, and classified for their intended electromagnetic environment. These electromagnetic environment classifications generally refer to the following harmonized definitions:

- Class A is typically for business or industrial environments.
- Class B is typically for residential environments.

Information Technology Equipment (ITE), including peripherals, expansion cards, printers, input/output (I/O) devices, monitors, and so on, that are integrated into or connected to the system should match the electromagnetic environment classification of the computer system.

A Notice About Shielded Signal Cables: Use only shielded cables for connecting peripherals to any Dell device to reduce the possibility of interference with radio communications services. Using shielded cables ensures that you maintain the appropriate EMC classification for the intended environment. For parallel printers, a cable is available from Dell. If you prefer, you can order a cable from Dell on the World Wide Web at accessories.us.dell.com/sna/category.asp?category_id=4117.

Most Dell computer systems are classified for Class B environments. However, the inclusion of certain options can change the rating of some configurations to Class A. To determine the electromagnetic classification for your system or device, refer to the following sections specific for each regulatory agency. Each section provides country-specific EMC/EMI or product safety information.

FCC Notices (U.S. Only)

Most Dell computer systems are classified by the Federal Communications Commission (FCC) as Class B digital devices. To determine which classification applies to your computer system, examine all FCC registration labels located on the bottom, side, or back panel of your computer, on card-mounting brackets, and on the cards themselves. If any one of the labels carries a Class A rating, your entire system is considered to be a Class A digital device. If *all* labels carry an FCC Class B rating as distinguished by either an FCC ID number or the FCC logo, (FC), your system is considered to be a Class B digital device.

Once you have determined your system's FCC classification, read the appropriate FCC notice. Note that FCC regulations provide that changes or modifications not expressly approved by Dell could void your authority to operate this equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- This device may not cause harmful interference.
- This device must accept any interference received, including interference that may cause undesired operation.

Class A

This equipment has been tested and found to comply with the limits for a Class A digital device pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the manufacturer's instruction manual, may cause harmful interference with radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case you will be required to correct the interference at your own expense.

Class B

This equipment has been tested and found to comply with the limits for a Class B digital device pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the manufacturer's instruction manual, may cause interference with radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, you are encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/television technician for help.

FCC Identification Information

The following information is provided on the device or devices covered in this document in compliance with FCC regulations:

- Model numbers: PowerConnect 3248, PowerConnect 3324, PowerConnect 3348, PowerConnect 5212, PowerConnect 5224

- Company name:

  Dell Computer Corporation
  One Dell Way
  Round Rock, Texas 78682 USA
  512-338-4400

IC Notice (Canada Only)

Most Dell computer systems (and other Dell digital apparatus) are classified by the Industry Canada (IC) Interference-Causing Equipment Standard #3 (ICES-003) as Class B digital devices. To determine which classification (Class A or B) applies to your computer system (or other Dell digital apparatus), examine all registration labels located on the bottom, side, or the back panel of your computer (or other digital apparatus). A statement in the form of "IC Class A ICES-003" or "IC Class B ICES-003" will be located on one of these labels. Note that Industry Canada regulations provide that changes or modifications not expressly approved by Dell could void your authority to operate this equipment.

This Class B (or Class A, if so indicated on the registration label) digital apparatus meets the requirements of the Canadian Interference-Causing Equipment Regulations.

Cet appareil numérique de la Classe B (ou Classe A, si ainsi indiqué sur l'étiquette d'enregistration) respecte toutes les exigences du Reglement sur le Materiel Brouilleur du Canada.

NOM Information (Mexico Only)

The following information is provided on the device(s) described in this document in compliance with the requirements of the official Mexican standards (NOM):

Exporter:	Dell Computer Corporation One Dell Way Round Rock, TX 78682
Importer:	Dell Computer de México, S.A. de C.V. Paseo de la Reforma 2620 - 11° Piso Col. Lomas Altas 11950 México, D.F.
Ship to:	Dell Computer de México, S.A. de C.V. al Cuidado de Kuehne & Nagel de México S. de R.I. Avenida Soles No. 55 Col. Peñon de los Baños 15520 México, D.F.
Model numbers:	PowerConnect 3248 PowerConnect 3324 PowerConnect 3348 PowerConnect 5212 PowerConnect 5224
Supply voltage:	100–240 VAC
Frequency:	50/60 Hz
Input current rating:	2 A

VCCI Notice (Japan Only)

Most Dell computer systems are classified by the Voluntary Control Council for Interference (VCCI) as Class B information technology equipment (ITE). However, the inclusion of certain options can change the rating of some configurations to Class A. ITE, including peripherals, expansion cards, printers, input/output (I/O) devices, monitors, and so on, integrated into or connected to the system should match the electromagnetic environment classification (Class A or B) of the computer system.

To determine which classification applies to your computer system, examine the regulatory labels/markings (see "VCCI Class A ITE Regulatory Mark" and "VCCI Class B ITE Regulatory Mark") located on the bottom, side, or back panel of your computer. Once you have determined your system's VCCI classification, read the appropriate VCCI notice.

Class A ITE

この装置は、情報処理装置等電波障害自主規制協議会(VCCI)の
基準に基づくクラス A 情報技術装置です。この装置を家庭環境で
使用すると電波妨害を引き起こすことがあります。この場合には
使用者が適切な対策を講ずるよう要求されることがあります。

This is a Class A product based on the standard of the Voluntary Control Council for Interference (VCCI) for information technology equipment. If this equipment is used in a domestic environment, radio disturbance may arise. When such trouble occurs, the user may be required to take corrective actions.

VCCI Class A ITE Regulatory Mark

If the regulatory label includes the following marking, your computer is a Class A product:

VCCI

Class B ITE

この装置は、情報処理装置等電波障害自主規制協議会(VCCI)の
基準に基づくクラス B 情報技術装置です。この装置は家庭環境で
使用することを目的としていますが、ラジオやテレビジョン受信機
に近接して使用されると、受信障害を引き起こすことがあります。
取扱説明書に従って正しい取り扱いをしてください。

This is a Class B product based on the standard of the Voluntary Control Council for Interference (VCCI) for information technology equipment. If this equipment is used near a radio or television receiver in a domestic environment, it may cause radio interference. Install and use the equipment according to the instruction manual.

VCCI Class B ITE Regulatory Mark

If the regulatory label includes the following marking, your computer is a Class B product:

MIC Notice (Republic of Korea Only)

To determine which classification (Class A or B) applies to your computer (or other Dell digital device), examine the Republic of Korean Ministry of Information and Communications (MIC) registration labels located on your computer (or other Dell digital device). The MIC label may be located separately from the other regulatory marking applied to your product. Line two of the label identifies the emissions class for the product—"(A)" for Class A products or "(B)" for Class B products.

NOTE: MIC emissions requirements provide for two classifications:

- Class A devices are for business purposes.
- Class B devices are for nonbusiness purposes.

Class A Device

기 종 별	사 용 자 안 내 문
A급 기기 (업무용 정보통신기기)	이 기기는 업무용으로 전자파적합등록을 한 기기이오니 판매자 또는 사용자는 이 점을 주의하시기 바라며 만약 잘못 판매 또는 구입하였을 때에는 가정용으로 교환하시기 바랍니다.

Please note that this device has been approved for business purposes with regard to electromagnetic interference. If you find that this device is not suitable for your use, you may exchange it for a nonbusiness-purpose device.

MIC Class A Regulatory Label

If the regulatory label includes the following marking, your computer is a Class A product:

1. 기기의 명칭(모델명):
2. 인증번호:(A)
3. 인증받은 자의 상호:
4. 제조년월일:
5. 제조자/제조국가:

Class B Device

기종별	사용자 안내문
B급 기기 (가정용 정보통신기기)	이 기기는 가정용으로 전자파적합등록을 한 기기로서 주거지역에서는 물론 모든 지역에서 사용할 수 있습니다.

Please note that this device has been approved for nonbusiness purposes and may be used in any environment, including residential areas.***MIC Class B Regulatory Label***

If the regulatory label includes the following marking, your computer is a Class B product.

1. 기기의 명칭(모델명):
2. 인증번호:(B)
3. 인증받은 자의 상호:
4. 제조년월일:
5. 제조자/제조국가:

BSMI Notice (Taiwan Only)

If you find a 檢磁xxxxxxxx or mark on the regulatory label on the bottom, side, or back panel of your computer, the following section is applicable:

BSMI 通告 (僅限於台灣)

大多數的 Dell 電腦系統被 BSMI (經濟部標準檢驗局) 劃分爲乙類數位裝置。但是，使用某些選件會使有些組態的等級變成甲類。若要確定您的電腦系統適用等級，請檢查所有位於電腦底部或背面板、擴充卡安裝托架，以及擴充卡上的 BSMI 註册標籤。如果其中有一甲類標籤，即表示您的系統爲甲類數位裝置。如果只有 BSMI 的檢磁號碼標籤，則表示您的系統爲乙類數位裝置。

一旦確定了系統的 BSMI 等級，請閱讀相關的 BSMI 通告。請注意，BSMI 通告規定凡是未經 Dell Computer Corporation 明確批准的擅自變更或修改，將導致您失去此設備的使用權。

此裝置符合 BSMI (經濟部標準檢驗局) 的規定，使用時須符合以下兩項條件：

- 此裝置不會產生有害干擾。
- 此裝置必須能接受所接收到的干擾，包括可能導致無法正常作業的干擾。

甲類

此設備經測試證明符合 BSMI (經濟部標準檢驗局) 之甲類數位裝置的限制規定。這些限制的目的是爲了在商業環境中使用此設備時，能提供合理的保護以防止有害的干擾。此設備會產生、使用並散發射頻能量；如果未遵照製造廠商的指導手册來安裝和使用，可能會干擾無線電通訊。請勿在住宅區使用此設備。

警告使用者：
這是甲類的資訊產品，在居住的環境中使用時，可能會造成射類干擾，在這種情況下，使用者會被要求采取某些適當的對策。

乙類

此設備經測試證明符合 BSMI (經濟部標準檢驗局) 之乙類數位裝置的限制規定。這些限制的目的是爲了在住宅區安裝時，能防止有害的干擾，提供合理的保護。此設備會產生、使用並散發射頻能量；如果未遵照製造廠商的指導手册來安裝和使用，可能會干擾無線電通訊。但是，這並不保證在個別的安裝中不會產生干擾。您可以透過關閉和開啓此設備來判斷它是否會對廣播和電視收訊造成干擾；如果確實如此，我們建議您嘗試以下列一種或多種方法來排除干擾：

- 重新調整天線的接收方向或重新放置接收天線。
- 增加設備與接收器的距離。
- 將設備連接至不同的插座，使設備與接收器連接在不同的電路上。
- 請向經銷商或有經驗的無線電/電視技術人員查詢，以獲得幫助。

Simplified Chinese Class A Warning Notice (China Only)

On Class A systems, the following warning will appear near the regulatory label:

Warning: This is a Class A product. In a domestic environment this product may cause radio interference, in which case the user may be required to take adequate measures.

声明

此为 A 级产品，在生活环境中，该产品可能会造成无线电干扰。
在这种情况下，可能需要用户对其干扰采取切实可行的措施。

Limited Warranties and Return Policy

Dell-branded hardware products purchased in the U.S. or Canada come with either a 90-day, one-year, two-year, three-year, or four-year limited warranty. To determine which warranty you purchased, see the invoice that accompanied your hardware product(s). The following sections describe the limited warranties and return policy for the U.S., the limited warranties and return policy for Canada, and the manufacturer guarantee for Latin America and the Caribbean.

Limited Warranty for the U.S.

What is covered by this limited warranty?

This limited warranty covers defects in materials and workmanship in your—our end-user customer's—Dell-branded hardware products, including Dell-branded peripheral products.

What is not covered by this limited warranty?

This limited warranty does not cover:

- Software, including the operating system and software added to the Dell-branded hardware products through our factory-integration system, third-party software, or the reloading of software
- Non-Dell-branded products and accessories
- Problems that result from:
  - External causes such as accident, abuse, misuse, or problems with electrical power
  - Servicing not authorized by us
  - Usage that is not in accordance with product instructions
  - Failure to follow the product instructions or failure to perform preventive maintenance
  - Problems caused by using accessories, parts, or components not supplied by us
- Products with missing or altered service tags or serial numbers
- Products for which we have not received payment

THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS, AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM STATE TO STATE (OR JURISDICTION TO JURISDICTION). DELL'S RESPONSIBILITY FOR MALFUNCITONS AND DEFECTS IN HARDWARE IS LIMITED TO REPAIR AND REPLACEMENT AS SET FORTH IN THIS WARRANTY STATEMENT. ALL EXPRESS AND IMPLIED WARRANTIES FOR THE PRODUCT, INCLUDING BUT NOT LIMITED TO ANY IMPLIED WARRANTIES AND CONDITIONS OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE LIMITED IN TIME TO THE TERM OF THE LIMITED WARRANTY PERIOD REFLECTED ON YOUR INVOICE. NO WARRANTIES, WHETHER EXPRESS OR IMPLIED, WILL APPLY AFTER THE LIMITED WARRANTY PERIOD HAS EXPIRED. SOME STATES DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS, SO THIS LIMITATION MAY NOT APPLY TO YOU.

WE DO NOT ACCEPT LIABILITY BEYOND THE REMEDIES PROVIDED FOR IN THIS LIMITED WARRANTY OR FOR CONSEQUENTIAL OR INCIDENTAL DAMAGES, INCLUDING, WITHOUT LIMITATION, ANY LIABILITY FOR THIRD PARTY CLAIMS AGAINST YOU FOR DAMAGES, FOR PRODUCTS NOT BEING AVAILABLE FOR USE, OR FOR LOST DATA OR LOST SOFTWARE. OUR LIABILITY WILL BE NO MORE THAN THE AMOUNT YOU PAID FOR THE PRODUCT THAT IS THE SUBJECT OF A CLAIM. THIS IS THE MAXIMUM AMOUNT FOR WHICH WE ARE RESPONSIBLE.

SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATION OR EXCLUSION MAY NOT APPLY TO YOU.

How long does this limited warranty last?

This limited warranty lasts for the time period indicated on your invoice, except that the limited warranty on Dell-branded batteries lasts only one year and the limited warranty on the lamps for Dell-branded projectors lasts only ninety days. The limited warranty begins on the date of the invoice. The warranty period is not extended if we repair or replace a warranted product or any parts. Dell may change the availability of limited warranties, at its discretion, but any changes will not be retroactive.

What do I do if I need warranty service?

Before the warranty expires, please call us at the relevant number listed in the following table. Please also have your Dell service tag number or order number available.

Individual Home Consumers:	**U.S. Only**
Technical Support	1-800-624-9896
Customer Service	1-800-624-9897
Individual Home Consumers who purchased through an Employee Purchase Program:	
Technical Support and Customer Service	1-800-822-8965
Home and Small Business Commercial Customers:	
Technical Support and Customer Service	1-800-456-3355
Medium, Large, or Global Commercial Customers, Healthcare Customers, and Value Added Resellers (VARs):	
Technical Support and Customer Service	1-800-822-8965
Government and Education Customers:	
Technical Support and Customer Service	1-800-234-1490
Dell-Branded Memory	1-888-363-5150

What will Dell do?

During the 90 days of the 90-day limited warranty and the first year of all other limited warranties: During the 90 days of the 90-day limited warranty and the first year of all other limited warranties, we will repair any Dell-branded hardware products returned to us that prove to be defective in materials or workmanship. If we are not able to repair the product, we will replace it with a comparable product that is new or refurbished.

When you contact us, we will issue a Return Material Authorization Number for you to include with your return. You must return the products to us in their original or equivalent packaging, prepay shipping charges, and insure the shipment or accept the risk if the product is lost or damaged in shipment. We will return the repaired or replacement products to you. We will pay to ship the repaired or replaced products to you if you use an address in the United States (excluding Puerto Rico and U.S. possessions and territories). Otherwise, we will ship the product to you freight collect.

If we determine that the product is not covered under this warranty, we will notify you and inform you of service alternatives that are available to you on a fee basis.

NOTE: Before you ship the product(s) to us, make sure to back up the data on the hard drive(s) and any other storage device(s) in the product(s). Remove any confidential, proprietary, or personal information and removable media such as floppy disks, CDs, or PC Cards. We are not responsible for any of your confidential, proprietary, or personal information; lost or corrupted data; or damaged or lost removable media.

During the remaining years: For the remaining period of the limited warranty, we will replace any defective part with new or refurbished parts, if we agree that it needs to be replaced. When you contact us, we will require a valid credit card number at the time you request a replacement part, but we will not charge you for the replacement part as long as you return the original part to us within thirty days after we ship the replacement part to you. If we do not receive the original part within thirty days, we will charge to your credit card the then-current standard price for that part.

We will pay to ship the part to you if you use an address in the United States (excluding Puerto Rico and U.S. possessions and territories). Otherwise, we will ship the part freight collect. We will also include a prepaid shipping container with each replacement part for your use in returning the replaced part to us.

NOTE: Before you replace parts, make sure to back up the data on the hard drive(s) and any other storage device(s) in the product(s). We are not responsible for lost or corrupted data.

What if I purchased a service contract?

If your service contract is with Dell, service will be provided to you under the terms of the service agreement. Please refer to that contract for details on how to obtain service.

If you purchased through us a service contract with one of our third-party service providers, please refer to that contract for details on how to obtain service.

How will you fix my product?

We use new and refurbished parts made by various manufacturers in performing warranty repairs and in building replacement parts and systems. Refurbished parts and systems are parts or systems that have been returned to Dell, some of which were never used by a customer. All parts and systems are inspected and tested for quality. Replacement parts and systems are covered for the remaining period of the limited warranty for the product you bought.

What do I do if I am not satisfied?

We pride ourselves on our great customer service. If you are not satisfied with the service you receive under this limited warranty, please let us know. We have found that the best way to resolve issues regarding our limited warranty is to work together. If, after those discussions, you are still not satisfied, we believe arbitration is the most expeditious way to resolve your concerns. Therefore, **ANY CLAIM, DISPUTE, OR CONTROVERSY (WHETHER IN CONTRACT, TORT, OR OTHERWISE, WHETHER PREEXISTING, PRESENT, OR FUTURE, AND INCLUDING STATUTORY, COMMON LAW, INTENTIONAL TORT, AND EQUITABLE CLAIMS) AGAINST DELL** arising from or relating to this limited warranty, its interpretation, or the breach,

You must ship the products to Dell within five days of the date that Dell issues the Credit Return Authorization Number. You must also return the products to Dell in their original packaging, in as-new condition along with any media, documentation, and all other items that were included in the original shipment, prepay shipping charges, and insure the shipment or accept the risk of loss or damage during shipment.

Limited Warranty Terms for Canada

What is covered by this limited warranty?

This limited warranty covers defects in materials and workmanship in your—our end-user customer's—Dell-branded hardware products, including Dell-branded peripheral products.

What is not covered by this limited warranty?

This limited warranty does not cover:

- Software, including the operating system and software added to the Dell-branded hardware products through our factory-integration system, or the reloading of the software
- Non-Dell branded products and accessories
- Problems that result from:
  - External causes such as accident, abuse, misuse, or problems with electrical power
  - Servicing not authorized by us
  - Usage that is not in accordance with product instructions
  - Failure to follow the product instructions or failure to perform preventive maintenance
  - Problems caused by using accessories, parts, or components not supplied by us
- Products with missing or altered service tags or serial numbers
- Products for which we have not received payment

THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS, AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM PROVINCE TO PROVINCE. DELL'S RESPONSIBILITY FOR MALFUNCTIONS AND DEFECTS IN PRODUCT IS LIMITED TO REPAIR AND REPLACEMENT AS SET FORTH IN THIS WARRANTY STATEMENT, FOR THE TERM OF THE WARRANTY PERIOD REFLECTED ON YOUR INVOICE. EXCEPT FOR THE EXPRESS WARRANTIES CONTAINED IN THIS WARRANTY STATEMENT, DELL DISCLAIMS ALL OTHER WARRANTIES AND CONDITIONS, EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION IMPLIED WARRANTIES AND CONDITIONS OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, STATUTORY OR OTHERWISE. SOME PROVINCES DO NOT ALLOW THE EXCLUSION OF CERTAIN IMPLIED WARRANTIES OR CONDITIONS, OR LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY OR CONDITION LASTS. THEREFORE, THE FOREGOING EXCLUSIONS AND LIMITATIONS MAY NOT APPLY TO YOU.

WE DO NOT ACCEPT LIABILITY BEYOND THE REMEDIES PROVIDED FOR IN THIS WARRANTY STATEMENT OR FOR SPECIAL, INDIRECT, CONSEQUENTIAL, OR INCIDENTAL DAMAGES, INCLUDING, WITHOUT LIMITATION, ANY LIABILITY FOR THIRD PARTY CLAIMS AGAINST YOU FOR DAMAGES, FOR PRODUCTS NOT BEING AVAILABLE FOR USE, OR FOR LOST DATA OR LOST SOFTWARE. OUR LIABILITY WILL BE NO MORE THAN THE AMOUNT YOU PAID FOR THE PRODUCT THAT IS THE SUBJECT OF A CLAIM. THIS IS THE MAXIMUM AMOUNT FOR WHICH WE ARE RESPONSIBLE.

SOME PROVINCES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF SPECIAL, INDIRECT, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATION OR EXCLUSION MAY NOT APPLY TO YOU.

How long does this limited warranty last?

This limited warranty lasts for the time period indicated on your invoice, except that the limited warranty on Dell-branded batteries lasts only one year and the limited warranty on the lamps for Dell-branded projectors lasts only ninety days. The limited warranty begins on the date of the invoice. The warranty period is not extended if we repair or replace a warranted product or any parts. Dell may change the terms and availability of limited warranties, at its discretion, but any changes will not be retroactive (that is, the warranty terms in place at the time of purchase will apply to your purchase).

What do I do if I need warranty service?

Before the warranty expires, please call us at the relevant number listed in the following table. Please also have your Dell service tag number or order number available.

Individual Home Consumers; Home Office and Small Business Customers:	**Canada Only**
Technical Support and Customer Service	1-800-847-4096
Medium, Large, and Global Commercial Customers; Government, Education, and Healthcare Customers; and Value Added Resellers (VARs):	
Technical Support	1-800-387-5757
Customer Service	1-800-326-9463
Government or Education Customers, or Individual Home Consumers who purchased through an Employee Purchase Program:	
Technical Support	1-800-387-5757
Customer Service	1-800-326-9463 (Extension 8221 for Individual Consumers)
Dell-Branded Memory	1-888-363-5150

What will Dell do?

During the 90 days of the 90-day limited warranty and the first year of all other limited warranties: During the 90 days of the 90-day limited warranty and the first year of all other limited warranties, we will repair any Dell-branded hardware products returned to us that prove to be defective in materials or workmanship. If we are not able to repair the product, we will replace it with a comparable product that is new or refurbished.

When you contact us, we will issue a Return Material Authorization Number for you to include with your return. You must return the products to us in their original or equivalent packaging, prepay shipping charges, and insure the shipment or accept the risk if the product is lost or damaged in shipment. We will return the repaired or replacement products to you. We will pay to ship the repaired or replaced products to you if you use an address in Canada. Otherwise, we will ship the product to you freight collect.

If we determine that the problem is not covered under this warranty, we will notify you and inform you of service alternatives that are available to you on a fee basis.

NOTE: Before you ship the product(s) to us, make sure to back up the data on the hard drive(s) and any other storage device(s) in the product(s). Remove any confidential, proprietary or personal information, removable media, such as floppy disks, CDs, or PC Cards. We are not responsible for any of your confidential, proprietary or personal information; lost or corrupted data; or damaged or lost removable media.

During the remaining years following the first year of all limited warranties: We will replace any defective part with new or refurbished parts, if we agree that it needs to be replaced. When you contact us, we will require a valid credit card number at the time you request a replacement part, but we will not charge you for the replacement part as long as you return the original part to us within thirty days after we ship the replacement part to you. If we do not receive the original part within thirty days, we will charge to your credit card the then-current standard price for that part.

We will pay to ship the part to you if you use an address in Canada. Otherwise, we will ship the part freight collect. We will also include a prepaid shipping container with each replacement part for your use in returning the replaced part to us.

NOTE: Before you replace parts, make sure to back up the data on the hard drive(s) and any other storage device(s) in the product(s). We are not responsible for lost or corrupted data.

What if I purchased a service contract?

If your service contract is with Dell, service will be provided to you under the terms of the service contract. Please refer to that contract for details on how to obtain service. Dell's service contracts can be found online at **www.dell.ca** or by calling Customer Care at 1-800-847-4096. If you purchased through us a service contract with one of our third-party service providers, please refer to that contract (mailed to you with your invoice) for details on how to obtain service.

How will you fix my product?

We use new and refurbished parts made by various manufacturers in performing warranty repairs and in building replacement parts and systems. Refurbished parts and systems are parts or systems that have been returned to Dell, some of which were never used by a customer. All parts and systems are inspected and tested for quality. Replacement parts and systems are covered for the remaining period of the limited warranty for the product you bought. Dell owns all parts removed from repaired products.

What do I do if I am not satisfied?

We pride ourselves on our great customer service. If you are not satisfied with the service you receive under this limited warranty, please let us know. We have found that the best way to resolve issues regarding our limited warranty is to work together. If, after those discussions, you are still not satisfied, we believe arbitration is the most expeditious way to resolve your concerns. Therefore, **ANY CLAIM, DISPUTE, OR CONTROVERSY (WHETHER IN CONTRACT, TORT, OR OTHERWISE, WHETHER PREEXISTING, PRESENT OR FUTURE, AND INCLUDING STATUTORY, COMMON LAW, INTENTIONAL TORT, AND EQUITABLE CLAIMS) AGAINST DELL** arising from or relating to this limited warranty, its interpretation, or the breach, termination or validity thereof, the relationships which result from this limited warranty (including, to the full extent permitted by applicable law, relationships with third parties), Dell's advertising, or any related purchase **SHALL BE RESOLVED EXCLUSIVELY AND FINALLY BY BINDING ARBITRATION ADMINISTERED BY THE NATIONAL ARBITRATION FORUM (NAF)** under its Code of Procedure then in effect (available via the Internet at **www.arb-forum.com/**, or via telephone at 1-800-474-2371). The arbitration will be limited solely to the dispute or controversy between you and Dell. Any award of the arbitrator(s) shall be final and binding on each of the parties, and may be entered as a judgment in any court of competent jurisdiction. Information may be obtained and claims may be filed with the NAF at P.O. Box 50191, Minneapolis, MN 55405.

While Dell offers a wide selection of software and peripheral products, we do not specifically test or guarantee that all of the products we offer work with any or all of the various models of Dell computers, nor do we test or guarantee all of the products we sell on the hundreds of different brands of computers available today. If you have questions about compatibility, we recommend and encourage you to contact the third-party software and peripheral product manufacturer or publisher directly.

Dell-Branded Peripheral Products

Dell does provide a limited warranty for new Dell-branded peripheral products (products for which Dell is listed as the manufacturer) such as monitors, batteries, memory, docking stations, and projectors). To determine which limited warranty applies to the product you purchased, see the Dell invoice and/or the product documentation that accompanied your product. Descriptions of Dell's limited warranties are described in preceding sections.

Return Policy

If you are an end-user customer who bought Dell Software and Peripherals products directly from a Dell company, you may return Dell Software and Peripherals products that are in as-new condition to Dell up to 30 days from the date of invoice for a refund of the product purchase price if already paid. This refund will not include any shipping and handling charges shown on your invoice; you are responsible for those.

To return products, you must call Dell Customer Service at 1-800-387-5759 to receive a Credit Return Authorization Number. You must ship the Dell Software and Peripherals products back to Dell in their original manufacturer's packaging (which must be in as-new condition), prepay shipping charges, and insure the shipment or accept the risk of loss or damage during shipment.

To qualify for refund or replacement, returned products must be in as-new condition, software products must be unopened, and all of the manuals, floppy disk(s), CD(s), power cables, and other items included with a product must be returned with it.

One-Year End-User Manufacturer Guarantee (Latin America and the Caribbean Only)

Guarantee

Dell Computer Corporation ("Dell") warrants to the end user in accordance with the following provisions that its branded hardware products, purchased by the end user from a Dell company or an authorized Dell distributor in Latin America or the Caribbean, will be free from defects in materials, workmanship, and design affecting normal use, for a period of one year from the original purchase date. Products for which proper claims are made will, at Dell's option, be repaired or replaced at Dell's expense. Dell owns all parts removed from repaired products. Dell uses new and reconditioned parts made by various manufacturers in performing repairs and building replacement products.

Exclusions

This Guarantee does not apply to defects resulting from: improper or inadequate installation, use, or maintenance; actions or modifications by unauthorized third parties or the end user; accidental or willful damage; or normal wear and tear.

Making a Claim

Claims must be made in Latin America or the Caribbean by contacting the Dell point of sale within the guarantee period. The end user must always supply proof of purchase, indicating name and address of the seller, date of purchase, model and serial number, name and address of the customer, and details of symptoms and configuration at the time of malfunction, including peripherals and software used. Otherwise, Dell may refuse the guarantee claim. Upon diagnosis of a warranted defect, Dell will make arrangements and pay for ground freight and insurance to and from Dell's repair/replacement center. The end user must ensure that the defective product is available for collection properly packed in original or equally protective packaging together with the details listed above and the return number provided to the end user by Dell.

Limitation and Statutory Rights

Dell makes no other warranty, guarantee or like statement other than as explicitly stated above, and this Guarantee is given in place of all other guarantees whatsoever, to the fullest extent permitted by law. In the absence of applicable legislation, this Guarantee will be the end user's sole and exclusive remedy against Dell or any of its affiliates, and neither Dell nor any of its affiliates shall be liable for loss of profit or contracts, or any other indirect or consequential loss arising from negligence, breach of contract, or howsoever.

This Guarantee does not impair or affect mandatory statutory rights of the end user against and/or any rights resulting from other contracts concluded by the end user with Dell and/or any other seller.

Dell World Trade LP
One Dell Way, Round Rock, TX 78682, USA

Dell Computadores do Brasil Ltda (CNPJ No. 72.381.189/0001-10)/
Dell Commercial do Brasil Ltda (CNPJ No. 03 405 822/0001-40)
Avenida Industrial Belgraf, 400
92990-000 - Eldorado do Sul – RS - Brasil

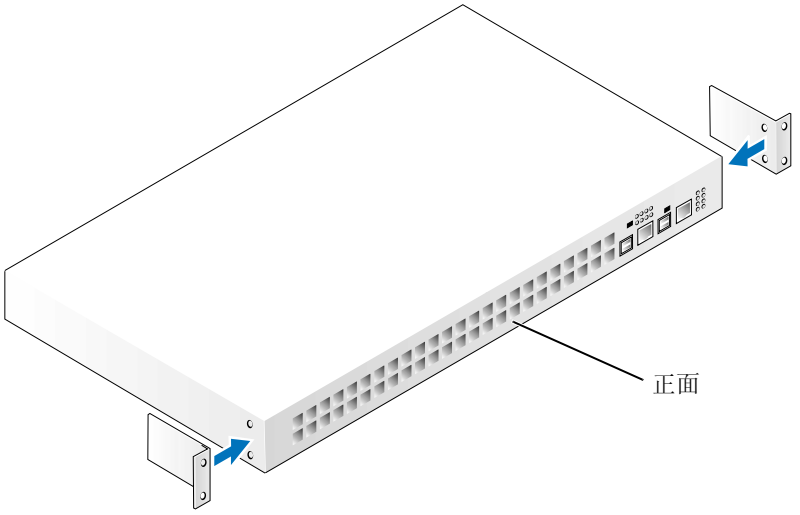
Dell Computer de Chile Ltda
Coyancura 2283, Piso 3- Of.302,
Providencia, Santiago - Chile

Dell Computer de Colombia Corporation
Carrera 7 #115-33 Oficina 603
Bogota, Colombia

Dell Computer de Mexico SA de CV
Paseo de la Reforma 2620 - 11° Piso
Col. Lomas Altas
11950 México, D.F.

Dell™ PowerConnect™ 32*xx*、 33*xx* 和 52*xx* 交换机

系统信息指南

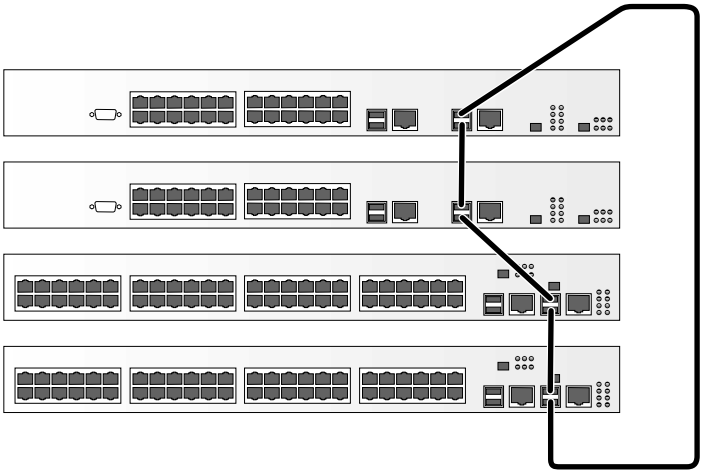


对 **3324** 和 **3348** 交换机进行堆栈

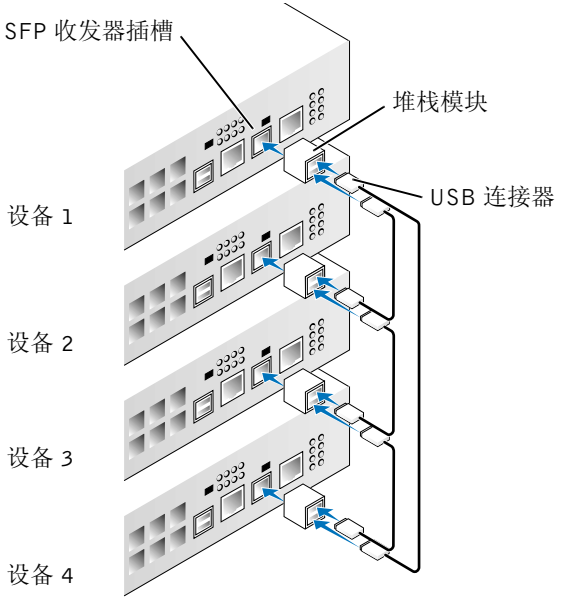
PowerConnect 3324/3348 支持对多达六台 PowerConnect 3324/3348 设备进行堆栈。每个 PowerConnect 3324/3348 堆栈都包含一个主控单元，而其它单元均被视为堆栈组成部分。所有管理操作均通过主控单元来执行。 24 端口和 48 端口设备均可包含在堆栈中。

要启用堆栈，必须使用连接至端口 G2（一个小型可插拔 [SFP] 收发器插槽）的可选堆栈模块对这些单元进行堆栈。引导堆栈中的任何系统之前，应该先插入堆栈模块。

注：将堆栈模块插入 SFP 收发器插槽，而不是插入 RJ-45 连接器。



在较高位置单元的下部 USB 连接器插槽（在堆栈模块中）与较低位置单元的上部 USB 连接器插槽（在堆栈模块中）之间连接堆栈电缆。



在引导过程中切换单元 ID 选择器按钮，将主控单元设置为单元 ID 1。在引导过程中，还应为堆栈组成单元分配介于 2 至 6 之间的唯一单元 ID。设置唯一 ID 将建立一个交换机堆栈，您可以通过主控单元对其进行管理。

连接控制台端口

交换机配备了 RS-232 串行端口，从而可以连接至台式机系统或终端以便对交换机进行监控和配置。此端口是 DB-9 插头连接器，可用于执行数据终端设备 (DTE) 连接。

要使用控制台端口，您必须具有以下设备：

- 一台终端或 TTY 兼容终端，或者一台配备串行端口并具有终端仿真能力的台式机或便携式系统
- 一根类调制解调器电缆或交叉 RS-232 电缆，附带适用于交换机上的控制台端口的 DB-9 插孔连接器

要将终端连接至控制台端口：

1. 将 RS-232 电缆的插孔连接器直接连接至交换机上的控制台端口，然后拧紧紧固螺钉。
2. 将电缆另一端连接至终端，或者连接至正在运行终端仿真软件的台式机系统的串行连接器。

   确保如下所述设置终端仿真软件：

   a. 选择适当的串行端口 （串行端口 1 或串行端口 2）。

   b. 根据交换机类型设置数据速率。

      对于 33*xx* 交换机，请选择 115200 波特率；对于其它所有交换机，请选择 9600 波特率。

   c. 将数据格式设置为 8 数据位、 1 停止位和无奇偶校验。

   d. 将流控制设置为 none。

   e. 在 “**Properties**”（属性）下选择 “**VT100 for Emulation**”模式。

   f. 选择 “**Terminal keys**”（终端键）作为 “**Function**”（功能键）、“**Arrow**”（箭头键）和 “**Ctrl keys**”（**Ctrl** 键）。确保设置适用于终端键 （而不是 **Windows** 键）。

使用 **CLI** 设定密码和用户权限级别

1 进入 CLI 上下文。

2 键入 `enable password level <level> <password>`

此处的 *level* 是从 1 至 15 的数字，1 表示最低级别，15 表示最高级别。级别 15 将指定 Privileged EXEC 模式，这是默认级别。

此处的 *password* 是所指定级别的密码。输入密码 （1 至 32 个字母数字字符）。输入之后，密码将会加密以确保安全。

有关此命令、各种级别、 Privileged EXEC 模式、全局配置模式以及接口配置模式的详情，请参阅 《Dell PowerConnect 交换机 CLI 指南》和 《Dell PowerConnect 3324/3348 用户指南》。

3 键入 `exit`。

将会退出 CLI 上下文。

恢复密码

可以通过“**Startup**”（启动）菜单使用密码恢复方法。

1 引导或重新引导设备，然后在 2 秒钟内按 <Enter> 键。

屏幕将显示“**Startup**”（启动）菜单。

```
Startup menu
[1] Download sw
[2] Erase from flash
[3] Erase Flash
[4] NVRAM Erase
[5] Password Recovery Procedure
```

2 键入 5，然后按 <Enter> 键。

系统将重设访问方法。

注：为确保设备的完整性，请重新定义“Console Access Method”（控制台访问方法）密码。

有关配置用户密码的详情，请参阅《CLI 用户指南》或适用的《PowerConnect 交换机用户指南》。

SNMP 设置

简单网络管理协议 (SNMP) 提供了一种管理网络设备的方法。支持 SNMP 的设备运行本地软件（代理）。

SNMP 代理保持了一份变量列表，用于管理设备。这些变量在管理信息库 (MIB) 中定义。MIB 包含由代理控制的变量。SNMP 代理定义了 MIB 规格格式以及用于通过网络访问信息的格式。

对 SNMP 代理的访问权限由访问字符串控制。为与设备进行通信，嵌入式 Web 服务器将提交有效的公用字符串以供验证。

交换机的默认公用字符串是：

- Public — 允许经授权的管理站检索 MIB 对象
- Private — 允许经授权的管理站检索并修改 MIB 对象

如果您不想使用 SNMP，请删除这两个默认公用字符串。如果不存在公用字符串，则会禁用对交换机的 SNMP 管理访问。

要删除这些字符串：

1. 对于 33*xx* 交换机，请键入 `enable`。

   提示符将显示为 `#`。

2. 如果您未进入 Privileged Exec 级别全局配置模式，请键入 `configure` 并按 <Enter> 键。
3. 要删除 **private** 公用字符串，请键入 `no snmp-server community private` 并按 <Enter> 键。
4. 要删除 **public** 公用字符串，请键入 `no snmp-server community public` 并按 <Enter> 键。
5. 对于 33*xx* 交换机，请键入 `exit` 以退出配置上下文。
6. 要保存配置更改，请键入 `copy running-config startup-config` 并按 <Enter> 键。

如果您希望使用 SNMP，请更改默认公用字符串以防止他人擅自访问交换机。

要更改字符串：

1 对于 33*xx* 交换机，请键入 `enable`。

提示符将显示为 #。

2 如果您未进入 Privileged Exec 级别全局配置模式，请键入 `configure` 并按 <Enter> 键。

3 要删除现有的 **private** 公用字符串，请键入 `no snmp-server community private` 并按 <Enter> 键。

4 键入 `snmp-server community` *`string`* `rw`，此处的 *`string`* 是分配读写访问权限的新公用字符串（区分大小写）；然后按 <Enter> 键。

5 要删除现有的 **public** 公用字符串，请键入 `no snmp-server community public` 并按 <Enter> 键。

6 键入 `snmp-server community` *`string`* `ro`，此处的 *`string`* 是分配只读访问权限的新公用字符串（区分大小写）；然后按 <Enter> 键。

7 要保存配置更改，请键入 `copy running-config startup-config` 并按 <Enter> 键。

分配 IP 地址 — PowerConnect 32*xx* 和 52*xx* 交换机

您必须为交换机分配 IP 地址，才能获得在网络内进行管理的权限。您可能还需要在交换机与存在于另一个网络段上的管理站之间建立默认网关。您可以静态配置特定 IP 地址，或者在交换机开机时指示其通过引导协议 (BOOTP) 或动态主机配置协议 (DHCP) 服务器获得一个地址。有效的 IP 地址包含四个十进制数字（0 至 255），数字之间以点号分隔。CLI 程序不接受其它任何格式的地址。

注意：默认设置下，IP 地址通过 DHCP 分配至 VLAN 1。

如果您选择 **bootp** 或 **dhcp** 选项，则会启用 IP，但是在收到 BOOTP 或 DHCP 回复之前不起作用。交换机将定期广播请求，以便了解其 IP 地址。（BOOTP 和 DHCP 值可以包含 IP 地址、默认网关和子网掩码）。

要使用 CLI 显示分配的 IP 设置：

1 在 Privileged Exec 或 Normal Exec 级别模式下，键入 `show ip interface` 并按 <Enter> 键。

屏幕将显示分配的 IP 地址和子网掩码。

2 在 Privileged Exec 模式下，键入 `show ip redirects` 以显示分配的网关 IP 地址，然后按 <Enter> 键。